

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Lavastre

Serial No.: 10/553,041

Confirmation No.: 1686

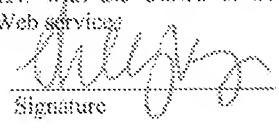
Filed: October 27, 2006

For: Hollow Beads of Polyethylene

§ Atty. Dkt. No.: F-871  
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§ Group Art Unit: 1793  
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§ Cust. No.: 25264  
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§ Examiner: Qian  
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Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Honorable Commissioner:

CERTIFICATE OF EFS-WEB TRANSMISSION 37 CFR 1.10	
I hereby certify that this correspondence is being deposited on the date below with the United States Patent Office via the EFS-Web service.	
3-12-2010	
Date	Signature

**APPEAL BRIEF**

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 1793 dated November 4, 2009, finally rejecting claims 10-16.

**Real Party in Interest**

The present application has been assigned to TOTAL Petrochemicals Research Feluy, Zone Industrielle C, Seneffe, Belgium B7181.

**Related Appeals and Interferences**

Appellants assert that no other appeals, interferences or judicial proceedings are known to the Appellants, the Appellants' legal representative or Assignee that will

directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **Status of Claims**

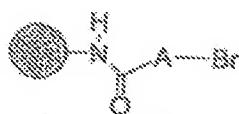
Claims 1-9 were originally presented in the application. Claims 1-9 were cancelled and claims 10-25 were added in a Preliminary Amendment. Claims 17-25 were withdrawn from consideration due to restriction. Accordingly, claims 10-16 are pending and stand rejected under 35 U.S.C. §103(a). The rejection of the pending claims is appealed. The pending claims are shown in the attached Appendix A.

### **Status of Amendments**

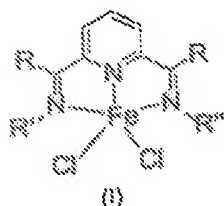
No amendments have been made to the pending claims in response to the Final Office Action.

### **Summary of Claimed Subject Matter**

Independent claim 10 recites a method for preparing a supported catalyst component for the production of hollow beads of polyethylene comprising providing porous functionalized beads of polystyrene characterized by the formula:



wherein: A is a substituted or unsubstituted alkyl group having from 2 to 18 carbon atoms providing a flexible arm, dissolving an iron-based complex characterized by formula I in a solvent:



wherein: R is an alkyl group having from 1 to 20 carbon atoms; R' and R'' are the same or different and are each a substituted or unsubstituted alkyl group having from 1 to 20 carbon atoms, an unsubstituted aryl group or a substituted aryl group having substituents

having from 1 to 20 carbon atoms, saturating the bead with the solution, thereafter evaporating the solvent and retrieving dry beads of the supported catalyst component. *See*, Specification, at least page 2, lines 13-25.

### **Grounds of Rejection to be Reviewed on Appeal**

The rejection of claims 10-16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 5,955,555 (*Bennett*) in view of U.S. Pat. No. 5,093,297 (*Woo*) and Science, Vol. 280, No. 536, pp. 267-270, 1998 (*Taylor*).

### **Arguments**

#### **THE EXAMINER ERRED IN REJECTING CLAIMS 10-16 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER *BENNETT* IN VIEW OF *WOO* AND *TAYLOR*.**

*Bennett* teaches contacting an iron complex with ethylene to form polyethylene via polymerization. *See*, Abstract. In contrast, *Woo* teaches hydroformylating olefins to aldehydes in the presence of a polymer immobilized rhodium catalyst. *See*, Abstract.

It is well settled that the Examiner bears the initial burden of establishing a prima facie case of obviousness. To establish a prima facie case, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references.

“While the Supreme Court of the United States has recently rejected a formalistic and rigid application of the teaching, suggestion, or motivation test as an exclusive test in the obviousness inquiry, it nevertheless made clear that an invention ‘composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.’” *See, KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). The Supreme Court elucidated on this matter by stating that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine elements in the way the claimed new invention does”. *See, Id.*

Appellants respectfully submit that one skilled in the art would not have been motivated to combine the teachings of *Woo* with the teachings of *Bennett*. The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). As discussed above, *Woo* teaches hydformylating processes, while *Bennett* teaches polymerization processes. Accordingly, one skilled in the art of olefin polymerization would not have looked to the teachings of *Woo* for support materials/methods. Furthermore, the “initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper”. *See*, MPEP § 2142. Appellants respectfully submit that no such motivation has been identified by the Examiner to date.

Even if *Bennett* and *Woo* were combined as suggested, such combined teachings lack critical features of the pending claims. The Examiner asserts that “[a]lthough neither *Bennett* nor *Woo et al.* specifically disclose the polystyrene beads...[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Bennett et al.* /*Woo et al.* and *Taylor et al.* to obtain the invention as specified”. *See*, Office Action dated May 22, 2009 at page 6, fourth full paragraph. Appellants respectfully disagree.

To establish a *prima facie* case, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Appellant's disclosure. *See*, MPEP §2143. Appellants respectfully submit that there is no teaching or suggestion in the prior art to combine porous functionalized beads of polystyrene with the claimed iron based complex to form a supported catalyst component for the production of hollow beads of polyethylene, as claimed.

Further, the teachings of the cited art lack a firm basis to predict the effect of the proposed interchange. It is well recognized that catalysts are a highly unpredictable art.

Accordingly, Appellants submit that no teaching exists as to the effect of utilizing the support of *Taylor* with the complex of *Bennett*, nor how the complex of *Bennett* would be combined with the support of *Taylor* to result in the claimed features.

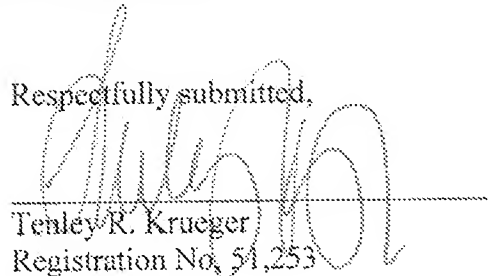
However, even if *Bennett* were combined with *Taylor* and/or *Woo* in the manner suggested by the Examiner, such combined teachings fail to teach all of the claim limitations, as required by Section 103. The Examiner states that *Taylor* "teaches an assay method for large encoded polymer encoded catalyst beads starting with the same polystyrene supported material as per applicant claim 10". See, Office Action dated May 22, 2009 at page 6, last full paragraph. Applicants respectfully disagree that *Taylor* teaches the same polystyrene supported material. *Taylor* does not teach, show or suggest a flexible arm (nor anchoring the catalyst on such support through the arm), as recited by the pending claims. Furthermore, Appellants can find no specific support for the "same" support material in the Office Actions of record.

For the reasons set for the herein, Appellants respectfully request reversal of the rejection.

### Conclusion

In conclusion, one skilled in the art would not have been motivated to combine the references of record in the manner identified. Furthermore, the references of record fail to teach, show or suggest all of the features of the pending claims. Thus, Appellants respectfully request reversal of the rejections of claims 10-16.

Respectfully submitted,



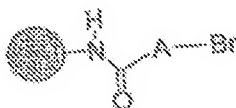
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## Appendix A

### Pending Claims

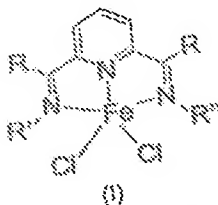
10. A method for preparing a supported catalyst component for the production of hollow beads of polyethylene comprising:

(a) providing porous functionalized beads of polystyrene characterized by the formula:



wherein: A is a substituted or unsubstituted alkyl group having from 2 to 18 carbon atoms providing a flexible arm;

(b) dissolving an iron-based complex characterized by formula I in a solvent:



wherein: R is an alkyl group having from 1 to 20 carbon atoms; R' and R'' are the same or different and are each a substituted or unsubstituted alkyl group having from 1 to 20 carbon atoms, an unsubstituted aryl group or a substituted aryl group having substituents having from 1 to 20 carbon atoms;

(c) saturating the bead of subparagraph (a) with the solution of subparagraph (b);

(d) thereafter evaporating the solvent; and

(e) retrieving dry beads of the supported catalyst component.

11. The method of claim 10 wherein R is an alkyl group having from 1 to 4 carbon atoms.

12. The method of claim 11 wherein R is a methyl group.

13. The method of claim 10 wherein R' and R" are the same and are substituted or unsubstituted phenyl groups.

14. The method of claim 13 wherein R' and R" are substituted phenyl groups in which the substituents are isopropyl groups in positions 2 and 6.

15. The method of claim 13 wherein R' and R" are substituted phenyl groups in which the substituents are methyl groups in positions 2, 4 and 6.

16. The method of claim 13 wherein R' and R" are unsubstituted phenyl groups.

**Appendix B**  
*Evidence*

Not Applicable



**Appendix C**  
***Related Proceedings***

Not Applicable